ANALYSIS OF SCROTAL SWELLINGS IN MADURAI MEDICAL COLLEGE

Dissertation submitted to

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

CHENNAI – 600032

M.S. GENERAL SURGERY

(BRANCH - I)

DEPARTMENT OF GENERAL SURGERY

MADURAI MEDICAL COLLEGE AND GOVERNMENT RAJAJI HOSPITAL, MADURAI – 625020

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CERTIFICATE

This is to certify that this Dissertation titled "**ANALYSIS OF SCROTAL SWELLINGS IN MADURAI MEDICAL COLLEGE"** submitted by **Dr. M. SENTHIL VELAVAN** to the faculty of general surgery, The Tamilnadu Dr.M.G.RMedical University, Chennai in partial fulfillment of the requirement for the award of MS Degree (Branch I) General Surgery, is a Bonafide Research Work carried out by her under our direct supervision and guidance from October 2016 to September 2017.

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I **Dr. M. SENTHIL VELAVAN**, hereby solemnly declare that this Dissertation entitled "**ANALYSIS OF SCROTAL SWELLINGS IN MADURAI MEDICAL COLLEGE"** is a Bonafide and Genuine Research work carried out by me.

This is submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai, in partial fulfillment of the regulations for the award of M.S Degree (Branch I) in General Surgery.

Place: Madurai

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INTRODUCTION

The scrotum is a sac of skin and involuntary muscles enclosing the testis, epididymis, vas deferens and spermatic vessels is a phylogenetic sophistication of the genito urinary system. The scrotum functions to provide an apt environment to the testis for optimal spermatogenesis, which is so important for perpetuation of a race. In other words scrotum is the thermoregulator of spermatogenesis.

The importance of scrotum, its contents and their pathologies can be assumed from it being considered as the tenth compartment of the abdomen. The high incidence of male infertility and other morbidities associated with scrotal pathologies make a detailed study into them and their management worthwhile.

Most of the patients with disease of the scrotum and its contents present with swelling of the scrotum and little more few other symptoms and signs. This study intends to look into the various pathologies of the scrotum and its contents, which present as scrotal swelling; and to highlight upon the best way to approach them; in order to restore the anatomy and physiology to the maximum possible level.

REVIEW OF LITERATURE

Scrotal swellings are one of the most common presenting symptom in surgical opd .Causes of scrotal swellings very much changed in last 10 to 20 years. Like, hydrocele was the most common cause of scrotal swellings in past but now a days significant reduction in hydrocele cases noted.

Now a days epididymo orchitis is most common cause of scrotal swellings. Same way varicocele cases significantly increased in last 10 years. varicocele which is one of the most common surgically correctable cause of male infertility

Numerous acute scrotal conditions may present in a similar way, torsion testis is by far the most significant. As the duration of torsion increases, the chance of testicular salvage decreases, so torsion testis is a true surgical emergency. Various other conditions that manifests in similar way to torsion testis include epididymo-orchitis torsion of appendix testis, haematocele, testicular trauma. Henoch Schonlein purpura and strangulated inguinal hernia, etc.

The diseases whose primary located elsewhere can also present with symptoms and sign in the scrotum. Examples are meconium peritonitis and haemoperitoneum. Similarly, a testicular torsion can present with nausea, vomiting and pain abdomen. This infers that scrotum cannot be seen as an area isolated from rest parts of the body.

In most of the cases, it should be possible to arrive at a reasonably accurate diagnosis based on clinical examination and detailed history along with the proper usage of imaging studies. For the management of acute scrotum, a variety of investigation have been described. These include a set of tests from simple urine examination to more advanced forms like ultrasonography, colour doppler studies and radio nucleotide scanning

Despite all the investigations, most of which are available in only some centers in India, early exploration of scrotum remains to be one of the most predominant diagnostic as well as therapeutic modality.

ANATOMY OF THE SCROTUM

The scrotum is a pendulous bag of skin & fascia designed to lodge the testis. The scrotal wall is composed of

a. Skin

b. Subcutaneous fascia Dartos muscle

c. External spermatic fascia

d. Cremasteric fascia

e. Internal spermatic fascia

f. Tunica vaginalis

BLOOD SUPPLY OF SCROTUM

The scrotum is supplied by

a. Superficial and deep external pudendal branches of femoral artery.

b. Medial and lateral scrotal branches of the internal pudendal artery.

c. Cremasteric artery from inferior epigastrie artery

NERVE SUPPLY OF SCROTUM

Ventral part - Ilioinguinal nerve (LI)

Dorsal part - scrotal branches of pudendal nerve (S2,S3) Perineal branches of posterior cutaneous nerve of thigh.

Cremaster - Genital branch of genitofemoral nerve (L1 ,L2)

LYMPHATIC DRAINAGE

Lymphatic vessels from the testis run upwards in the spermatic cord and alongside the veins end in the para aortic lymph nodes at the level of the first lumber vertebra.

Lymphatic drainage of the scrotum takes place to the inguinal glands.

CONTENTS OF THE SCROTUM

Scrotum contain both the testis and the corresponding spermatic cords.

TESTIS

Testis lies in the scrotum with its long axis oblique and upper pole tilted Forward, with vas deferens and epididymis posteriorly. Size is about 5cm x 2.5cm x3cm.

Testis is covered by bluish white “Tunica albuginea” which invades the interior to form the mediastinum along its posterior border.

150 to 200 septae divide the interior into lobules, “Rete Testis” from which vasa efferentia enter the head of the epididymis.

EPIDIDYMIS

It is coiled structure containing a single epididymal tubule and attached to the posterolateral surface of each testis. It has a head, body & tail. The canal of epididymis leaves the tail and continues as vas deferens.

SPERMATIC CORD

It is extends from the deep inguinal ring to the posterosuperior border of the testicle, surrounded by three fibrous coats derived from the abdominal wall during the descent of the testis

a External spermatic fascia

b. Cremastric fascia

c. Intenral spermatic fascia

along with peritoneum, preperitoneal fat and contains vas deferens

Spermatic cord contains

a) Vas deferens

b) Artery to the vas & testicular artery

c) Pampinifrom plexus of veins & accompanying lymphatics

d) Sympathetic plexus of nerves along the arteries.

TESTICULAR PHYSIOLOGY

The two main function of the testis are to produce spermatozoa and to secrete testosterone. The seminiferous tubules and seitoli cells are responsible for spermatogenesis and the interstital cells or Leydig cells secrete androgen, predominantly testosterone.

Specialised functional complex between sertoli cells are believed to form the bloodtestis barrier. FSH is required to initiate spermatogenesis. Between the seminiferious tubules of the testis lies the interstitial tissue containing blood vessels, lymphatic vessels, Leydig cells, macrophges and supporting cells. The leydig cell produces androgen, mostly testosterone, under the influence of LH.

DIAGNOSTIC APPROACH TO SCROTAL SWELLINGS

CLINICAL EXAMINATION

Some clinical findings are important to particular cases such as follows.

Hydrocele	-	Transillumination Positive
	-	Able to get above the swelling
	-	Fluctuation Positive.
Testicular tumour	-	Loss of testicular sensation
Torsion Testis	-	Prenhs sign Positive

GENERAL INVESTIGATIONS

Routine haematologic investigations like Total WBC count, Differential Leucocyte count & ESR will be helpful in diagnosing inflammatory conditions causing scrotal swellings. Eosinophil count will be raised in Filariasis which is a common cause for secondary hydrocele in endemic areas. Night smear examination will reveal microfilariae in cases with filarial aetiology.

Urine examination and urethral discharge analysis will be helpful in the causes of epididymoorchitis. Gram staining and culture will be helpful not only in identifying the causative factor but also in testing specific antibiotic sensitivity.

Serologic studies will be of help in diagnosing specific cause like syphilis, HIV and nonspecific causes like Chlamydial infection.

Accessory investigation like slit smear exam for leprosy, hypersensitive test for tuberculosis & leprosy and pus culture from purulent lesions of the scrotal wall also help in moving towards an appropriate diagnosis.

RADIOLOGICAL INVESTIGATION:-

X - RAY CHEST

Plain x- rays of chest may be helpful in further characterising the pathology by the evidence of pulmonary tuberculosis, eosinophilia or secondaries.

ULTRASOUND

USG Examination using high resolution transducers (5 to 7.5 MHz) has now become the investigation of choice in scrotal swellings. Major diagnostic role of ultrasound is to differentiate intra and extra testicular lesions.

The aphorism that focal poorly reflective lesions within the testis is presumed malignant until proved otherwise, hold true. It help us in differentiating simple hydrocele from closely clinically mimicking

conditions like cyst of epidymis and testicular tumor. Extreme value of ultrasound lies in diagnosing rupture of testis in case of trauma.

Entire genitourinarty system, Liver and retroperitoneal lymph nodes could be simultaneously evaluated.

DOPPLER

It helps us in differentiating testicular torsion from acute epididymo orchitis by the flow void sequences in the testicular artery.The disadvantage of Doppler lies in non visualization of the testicular infarct produced in cases where spontaneous detorsion has occurred now.

LYMPHOGRAPPHY

Bipedal Lymphography is now rarely performed as a staging procedure while it can detect metastasis in normal sized node and the results of lymphography are equivocal to abdominal CT. this invasive procedure is not reliable in detecting recurrence compared to the use of CT and tumor markers.

ODILAG (OPEN DIRECT INGUINAL LYMPHNGIOGRAPHY)

It was preferred over by pedal lymphangiography due to high percentage of false negative results because of poor filling of primary lymph nodes in the later case. On the table ODILAG is helpful in identifying overlooked diseased nodes.

This modality is now not in vogue due to the complications like Ethiodol pneumonitis and the advent of CT.

COMPUTED TOMOGRAPHY

CT is the mainstay in the radiological staging of testicular tumors. CT. helps in the identification of nodes between 8 to 10mm size. Other abdominal organs can also be scanned at the same time. An initial staging thoracic CT is indicated as it is the most sensitive methods in detecting pulmonary and mediastinal metastasis compared to lymphography. CT is a non invasive procedure and also readily identifies the sentinel node and thence picking out early metastasis. The disadvantage being misdiagnosis of unopacified bowel loops, lymphatic vessels, post operative haematomas as lymphadenopathy and thereby overstaging. An added advantage of CT being its guidance in obtaining specimens lymph nodes.

MRI

MRI has its role in diagnosing residual tumor from retoperitoneal fibrosis which is very difficult to diagnose by CT alone. The disadvantage of MRI is failure in detecting calcification. The major disadvantage being unavailability, time consumption and cost factor.

RADIONCLEOTIDE SCANNING

99m Technetium pertechnatate scan is a widely practiced, accepted procedure for diagnosing testicular torsion. The disadvantage being cost effectiveness and availability.

A. HYDROCELE

Hydrocele is an abnormal collection of serous fluid in the tunica vaginalis of the testis or within some part of processus vaginalis.

It can be Congenital or Acquired and Primary (idiopathic) or secondary.

It is better defined as abnormal collection of serous fluid in tunica vaginalis when no other pathology is made out in the testis or epididymis.

I. Primary Hydrocele

Types of primary hydrocele are

a. Vaginal (Commonest)

b. Infantile

c. Congenital

d. Funicular

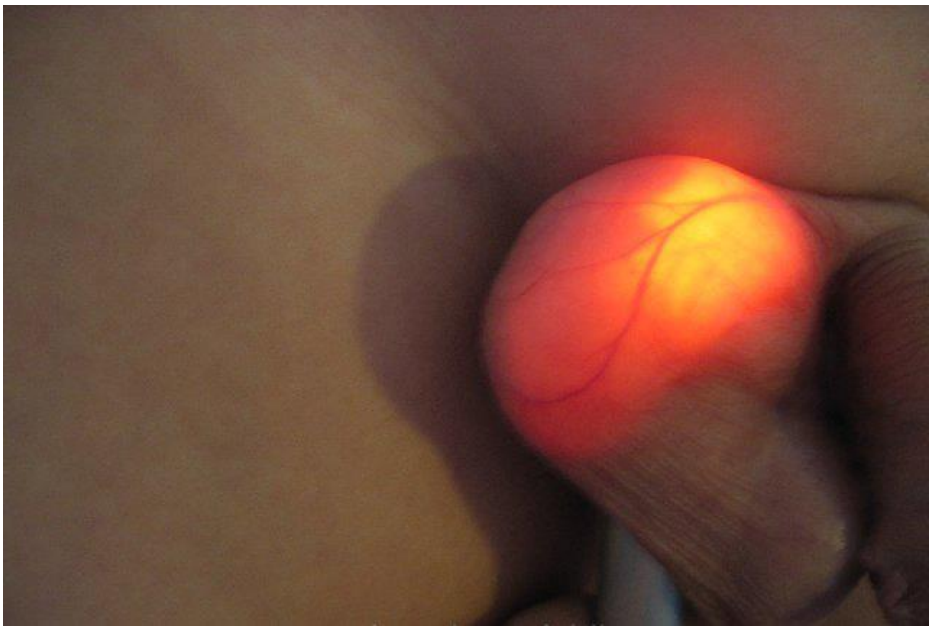
e. Encysted hydrocele of the cord

Other rare types are

a. Hydrocele of the hernial sac

b. Hydrocele en bisac

c. Hydrocele of canal of Nuck



HYDROCELE – TRANSILLUMINATION TEST

AETIOPATHOLOGY AND MANAGEMENT

AETIOLOGY

The various aetiologies proposed are excessive production of fluid, defective absorption, interference with lymphatic drainage and connection with a hernia of the peritoneal cavity.

CLIINICAL FEATURES

Usually fluctuant, not reducible and it will be possible to get above the swelling.,

a. VAGINAL HYDROCELE

This is the commonest variety commonly found in the tropical countries and the processus is found obliterated at the level of superior pole of the testis. The Fluid is amber coloured and the specific gravity ranges from 1.022 to 1.024. The usual composition is water, inorganic salts and 6% albumin; fibrinogen is present in longstanding cases and cholesterol and tyrosine crystals can be found rarely.

It starts as a painless swelling in a middle aged, man, often unilateral and the testis cannot be felt separately.

b. CONGENITAL HYDROCELE

syn: COMMUNICATING HYDROCELE

It is due to patent processus vaginalis, having direct communication with the peritoneal cavity; but the orifice at the deep inguinal ring is too small to develop hernia. It presents since birth and slowly disappears on lying down position.

Ascities or Ascitic tuberculous peritonitis should be consdered if the swellings are bilateral.

c. INFANTILE HYDROCELE

Here the tunica and the processus vaginalis are distended upto the deep inguinal ring but do not communicate with the general peritoneal cavity. It presents as a inguinoscrotal swelling not reducible and there will be no impulse on coughing. It does not disappear on lying down.

d. FUNICULAR HYDROCELE

Rare condition often confused with inguinal hernia. The funicular process is closed just above the tunica vaginalis so that it does not produce a proper scrotal, but an inguinal swelling is produced. Testis can be felt separately.

e. ENCYSTED HYDROCELE OF THE CORD

It occurs when a portion of the funicular process persists and remains patent, shut off from the tunica vaginalis below and the peritoneal cavity above. It starts as an oval cystic swelling in relation to the spermatic cord lying in the inguinal/inguinoscortal/ scrotal region. Testis can be felt separately not reducible and it will be possible to get above the swelling. Traction test is pathognomonic.

f.BILOCULAR HYDROCELE

syn: HYDROCELE EN BISAC

Rare variety where the hydrocele has intercommunicating sacs, one above and one below the neck of the scrotum. The upper sac has no connection with processus vaginalis and it is infact the herniated tunica vaginalis. Cross fluctuation between the two sacs of the hydrocele is pathognomonic.

g. HYDROCELE OF THE HERNIAL SAC

Due to stagnation of the fluid within the hernial sac when a tag of omentum blocks the opening of the sac at the deep inguinal ring.

II. SECONDARY HYDROCELE

It is due to the disease of the testis and or the epididymis.

Causes of secondary hydrocele are acute conditions like acute epididymoorchitis, torsion, trauma and chronic conditions like chronic epididymoorchitis, malignant disease of the testis, lymphatic obstruction and syphiIitic affection of the testis.

These are usually small and lax and hence testis is easily palpable. Any acutely developing hydrocele may be secondary to testicular tumor.

COMPLICATIONS OF HYDROCELE

a. INFECTION

b. ATROPHY OF THE TESTIS

Dey has observed an arrest of spermatogenesis and consequent testicular atrophy as a result of fluid pressure in the tunica vaginalis.

c. IMPAIRED SPERMATOGENESIS

M.C. Dandapat et al have reported that big hydroceles of the tunica vaginalis testis of long duration impair spermatogenesis or fertility.

d. RUPTURE — traumatic or spontaneous

e. HAEMATOCELE — traumatic or spontaneous

f. HERNIA OF THE HYDROCELE SAC

g. CALCIFICATION OF THE HYDROCELE SAC WALL

h. PYOCELE

i. CLOTTED HYDROCELE

TREATMENT MODALITIES AVAILABLE FOR HYDROCELE

a. ASPIRATION

It is preferred in older patients who are unfit for surgery. Before aspiration position of the testis should be confirmed and ensured that it is healthy and not done nowadays.

Disadvantages of this procedure are it gives only temporary relief and rarely it cause haematoma.

b. SCLEROTHERAPY

The solution which was used in the earlier days is Quinine hydrochloride 4gm) and Urethane (4gm) in water (30m1).

Scierosants more commonly used now are Sodium tetradecylsulphate, tetracycline hydrochloride, Minocycline, Ethanolamine oleate and Polidocanol(3%).

After aspirating the fluid sclerosant is injected and the scrotum is supported for some days. If necessary the procedure may be repeated at a later date.

Disadvantaged are pain, recurrence, haematoma and infection.

Various studies have been conducted on sclerosants for hydrocele using various sclerosants which includes phenol (Nash 1984), tetradecyl sulphate(Mecfarlane 1983). Tetracycline (Hu et al, Badenech et al, Bullock et al),Ethanolamine oleate and Polydocanol . Upon the above sclerosants comparative trial by Rencken et al revealed that Tetracycline + tradecyl sulphate to be superior in the cure rates (95%), availability and also most effectiveness.

c. SURGICAL MANAGEMENT

There are two approaches — inguinal and scrotal. Both procedures can be done under LA, SA or GA.

In inguinal approach the sac is delivered through an inguinal incision over superficial inguinal ring.

In the scrotal approach the sac is delivered through vertical paramedian or transverse incision.

If the hydrocele is small and thin walled Jaboulays Procedure or Lords Plication can be done. If the hydrocele is large or the sac is thick walled, excision of the sac is the procedure of choice. If heamatoma formation is expected scrotum should be drained by a CRD. Risk of post operative complications is less after Lord Procedure and it can be done as out patient Procedure.

HYDROCELE – INTRAOPEATIVE

The selection of the patient for the type of surgery was based upon size, thickness of the tunica vaginalis, redundancy of the scrotal skin and also the surgeon who is performing the procedure. Smaller sacs were either everted and plicated and the larger ones were excised. In some cases both partial excision and eversion were performed. Very few patients with increased redundancy of scrotal skin underwent scrotal skin excision and reconstruction following usually excision of sac.

OTHER NEW PROCEDURES UNDER TRIAL ARE

a. EVERTED PLICATION

It is a combination of plication and eversion. The advantages claimed are need of less time, less suture material and less injury to epididymis and testis.

b. ENDOSCOPIC HYDROCELE FULGRATION

This procedure is under evaluation. Here the partial surface of the sac is completely fulgurated by a resectoscope with a 30 degree lens inserted via a modified laparoscopic trocar inserted into the hydrocele under video monitoring.

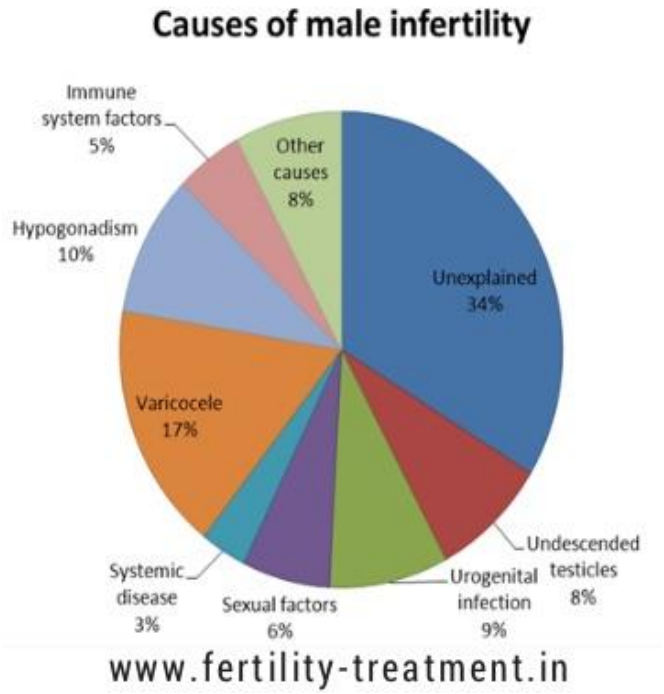
c. LAPAROSCOPIC REPAIR OF PAEDIATRIC HYDROCELES

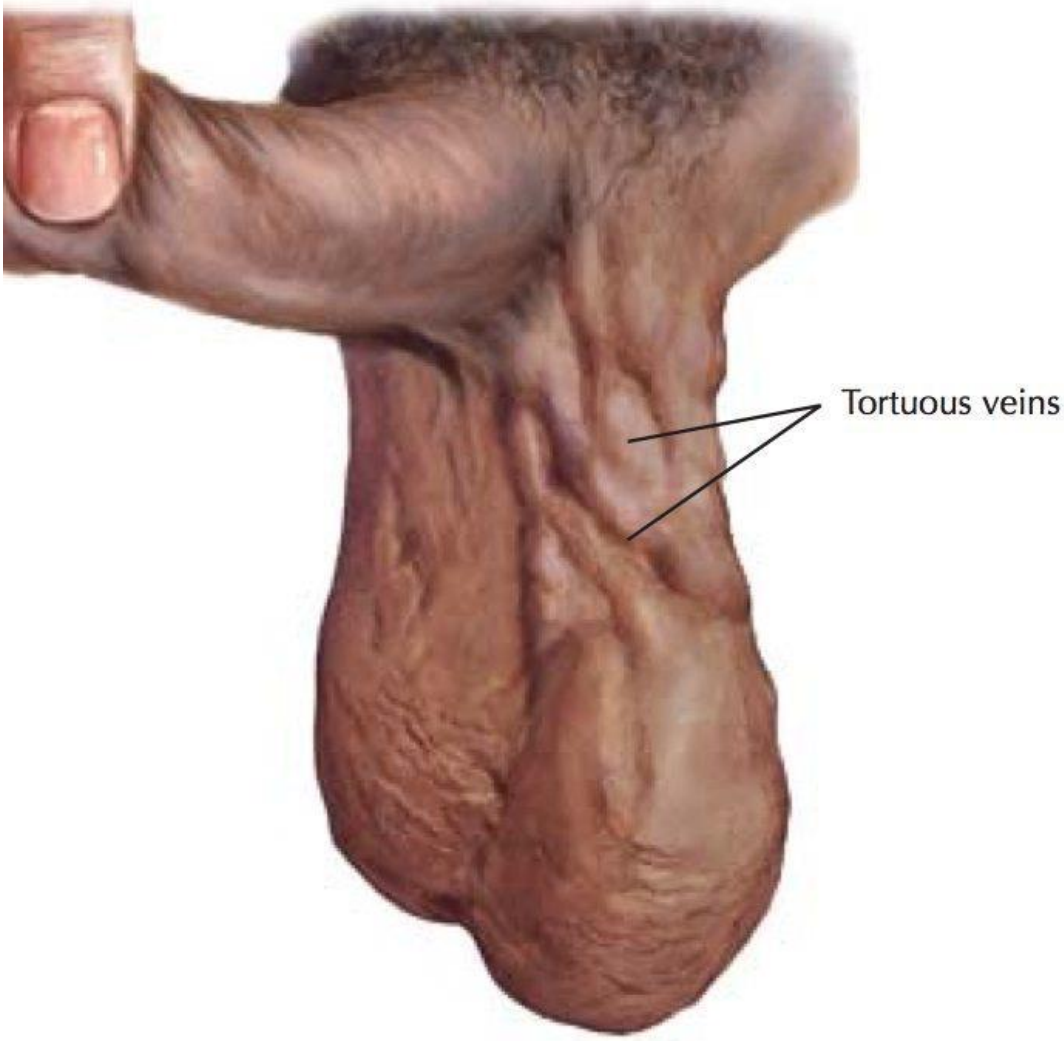
Here the open processus vaginalis is transected using laparoscope.

B. VARICOCELE

Varicocele is defined as dilated elongated and tortuous pampiniform plexus of veins.

- Varicoceles are considered to be the commonest correctable cause of male infertility . Their incidence among infertile men is 20-40% – about three times greater than in the general population
- About 60% of the operated men will show good improvement in semen parameters.





VARICOCELE – CLINICAL PICTURE

Aetiotogy

a) Primary or idiopathic

b) Secondary

Left — due to hypernephroma

Right — Tumor thrombus extending upto IVC resulting in block

c) Constitutional

It is more common in left side (98%) when compared to right side (2%). It is usually asymptomatic when small, but causes a heavy, dragging, aching sensation which becomes worse on prolonged standing and exertion. Some present with subfertility and infertility. Any middle aged men with sudden onset of varicocele must be completely investigated for hypernephroma.

On inspection dilated veins can be seen over the scrotum; on palpation the dilated veins will appear like a bag of worms.Cough impulse and thrill will be usually positive. Testis on the affected side is usually small due to atrophy. On lying down primary varicocele empties, whereas it does not happen in case of secondary lesion.

PREDILECTION FOR LEFT SIDE

1. High insertion and increase in length of the left testicular vein.

2. The left testicular vein drains into the left renal vein at right angle.

3. The left suprarenal vein drains into the left renal vein results in release of catecholamines causing vasoconstriction.

4. Compression of left renal vein in between abdominal aorta and superior mesenteric artery.

5. Compression by loaded colon.

6. Left testicular artery may arch over left renal vein and thus may cause compression over it.

TREATMENT OF VARICOCELE

CONSERVATIVE

If the varicocele is small scrotal support and reassurance is enough.

SURGICAL

The indication for surgery are severe pain, infertility and for cosmetic purpose. For all cases seminal analysis was done pre operatively

TYPES OF SURGERY

CLASSICAL

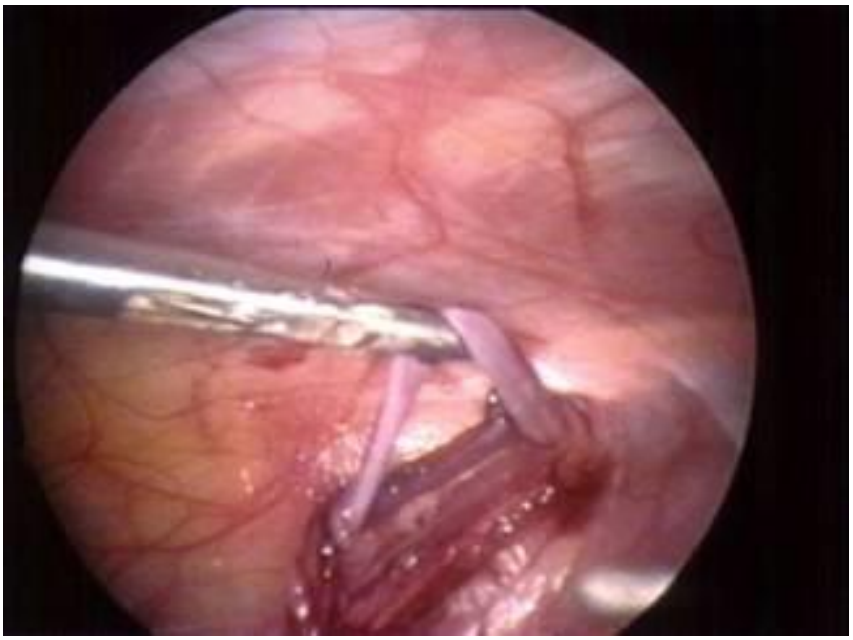
Here a portion of spermatic veins is excised between ligatures. It can be done through inguinal or scrotal route, scrotal approach is not usually preferred as recurrence, bleeding, infection and damage to testicular artery are more common.

PALOMO OPERATION

Here the spermatic vein is approached retroperitoneally and ligated.

LAPAROSCOPIC SURGERY

Here the internal spermatic vein is clipped and divided. Laparoscopic varicocelectomy is a simple, safe, effective and minimally invasive procedure and it can be proposed as a viable alternative to open traditional surgical methods.



LAPAROSCOPIC VARICOCELECTOMY

Recurrence rate is very low when compared with traditional surgical methods (Recurrence rate for traditional methods is 1-25%). Patient can return to normal activity earlier.

MICROSURGICAL HIGH INGUINAL VARICOCELECTOMY WITH DELIVERY OF THE TESTIS

In this method the testis is delivered through inguinal route and the spermatic cord is dissected under optical magnification. All external spermatic and gubernacular veins are ligated and testicular artery, lymphatics and vas deferens is identified and preserved.

Advantages of this procedure are no clinical recurrence, no post operative hydrocele formation, increase pregnancy rate and no wound infection

EMBOLISATION

Embolisation of testicular vein at the inguinal canal is performed using either balloons or steel coils.

PERCUTANEOUS SCLEROTHERAPY

It is a simpler technique obliterates the testicular vein by placing the catheter tip at the proximal portion of the testicular vein and injection of sclerosants.

C. EPIDIDYMO ORCHITIS

It refers to inflammation of the epididymis and the testis.

Clinically it is divided into acute and chronic epididymoorchitis; pathologically it is divided into specific and nonspecific epididymoorchitis.

1. ACUTE EPIDIDYMOORCHITIS

Initially the infection is confined to the epididymis and later spreads to the body of the testis. Infection can reach the epididymis in the following ways.

As retrograde infection from the urethra, prostate and seminal vesicles; globus minor is affected first. Organisms involved in retrograde infection are .Eco1, Klebsiella and Gonococcus.

As sexual transmission associated with urethritis; organisms involved are Chlamydia and Gonococcus.

As blood borne infection; globus major is affected first. Organisms responsible are Streptococci, Staphylococci, Proteus and E.coli.

These patients present with severe pain and swelling in the testis and associated constitutional symptoms like fever, malaise and chills.

Urinary tract infection symptoms like frequency, urgency, dysuria, pyuria and haematuria may be present. On examination the scrotal wall will be

red, edematous, shiny and adherent to the epididymis. Epididymis will be diffusely swollen and tender.

DIFFERENTIAL DIAGNOSIS FOR ACUTE EFIDIDYMOORCHITIS

a. Acute torsion of spermatic cord

b. Acute torsion of hydatid of morgagni and other appendages of testis.

c. Spontaneous haemorrhage of a testicular tumor

d. Trauma to the scrotum

e. Thrombosis of the pampiniform plexus

TREATMENT OF ACUTE EPIDIDYMO ORCHITIS

a) In children and men over 35 years the infection is mostly due to bacterial urinary tract infection. So the urine should be cultured and appropriate antibiotics should be given for a period of 2-3 weeks.

b)In young men below 35 years the infection is mostly sexually acquired. SO gram stain and special culture of urethral secretion should be done and treated with appropriate antibiotics.

If culture is not helpful, serological tests like (IgM and IgG antibodies to Chlamydia) is done and treated with Tetracycline and Doxycyline. Minocycline and Erythromycin can also be used.

Non specific measures are absolute bed rest, plenty of oral fluids, elevation of scrotum and analgesics.

ACUTE EPIDIDYMOORCHITIS OF MUMPS

It occurs in prepubertal boys. It occurs in 20% of males suffering from Mumps as the parotid swelling is waning. It starts as unilateral testicular swelling with severe pain, high fever, malaise and associated with acute hydrocele. There will be no scrotal edema. If there is bilateral affection it can cause infertility. Partial atrophy will cause persistent testicular pain. As the cure is spontaneous symptomatic treatment alone is needed.

Other rare causes of acute epididymoorchitis are Enteroviral infection, Meningocooccal infection, Brucellosis, Typhoid, LGV, Trauma, Exposure to chemicals and Blastomycosis.

2. CHRONIC EPIIMDYMOORCHITIS

It can be classified into specific and nonspecific epididymoorchitis. Specific infections are of Tuberculous, Syphilitics, Leprous and Viral etiology.

a)CHRONIC TUBERCULOUS EPIIMDYMOORCHITIS

Globus of the epididymis is the first part to be affected by retrograde infection from a Tuberculous focus which is usually in the seminal vesicle. Onset of this condition is insidious and it is rarely through a haematogenous route either from a focus in the lungs or from isolated renal tuberculosis.

Patients present with a minimal swelling of the testis and slight aching sensation. In 30% of cases there is an associated secondary hydrocele.

It starts as a firm discrete swelling in the lower pole which becomes firm and craggy in consistency. In the later stages nodules could be appreciated in the body which further softens to become cold abscess and discharging sinus in the posterior aspect of the scrotum. Characteristic beading of the vas deferns due to sub epithelial pearls, thickened seminal vesicles, tender and irregular prostate are the late manifestations of this disease.

TREATMENT

If no significant improvement with antituberculous treatment is made out, epididymoorchidectomy is usually performed.

b)SYPHILITIC ORCHITIS

Testis and epididymis are affected both in congenital and acquired syphilis. Invariably the testis being affected first. Chronic draining fistulae are common in treated conditions.

Manifestation of syphilis are of 3 types.

a. Bilateral orchitis — in congenital syphilis

b. Interstitial fibrosis — symptomless condition in which the testis of normal size but for the loss of testicular sensation, and is usually bilateral.

c. Gumma — This is the commonest type which is always unilateral. It starts as a painless, hard, enlarged testis with loss of testicular sensation. Later the testis softens anteriorly and a gummatous ulcer develops in the anterior aspect of the scrotal wall. Secondary hydrocele is a must in this condition and is to be differentiated from testicular tumor.

c)LEPROUS ORCHITIS

In case of lepromaous orchitis the testis is usually extensively involved with destruction of seminiferous tubules eventually resulting in testicular atrophy and consequent sterility.

No case of leprous orchitis was reported in this series.

d)VIRAL ORCHITIS

Usually presents as an acute manifestation and may sometimes persist chronically with reactive secondary hydrocele. The common causative agents being Mumps virus, Influenza, Smallpox, Measles, Varicella, Coxsackie virus and HIV

TREATMENT

Symptomatic treatment with analgesics and steroids. ACTH is rarely used and is less useful. Sometimes tapping of a tense hydrocele is done to relieve pain but with risk of secondary infection.

e) CHRONIC NONSPECIFIC EPIDIDYMO ORCHITIS

(GRANULOMATOUS /AUTOIMMUNE)

It occurs in middle aged men following an acute attack which fails to resolve. If often presents with fever and a moderately tender testicular swelling. This conditions is to be differentiated from tuberculous epididymoorchitis by it is larger size and smoothness.

It usually, follows Sarcoidosis, chemical exposure, urethral stricture causing reflux of urine down the vas initiating an autoimmune reaction.

TREATMENT

Epididymoorchidectomy.

f)POST OPERATIVE EPIDIDYMOORCHITIS

In earlier days post operative epididymoorchitis following trans vesical prostatectomy was frequently encountered. Vasectomy was employed for the above cases to prevent spread of infection which now seldom occurs, after the invention of modem chemotherapeutic agents.

g)SUB ACUTE EPIDIDYMOORCHITIS (FILARIAL)

In filarial epididymoorochitis the globus major is the first part to be affected followed by testis. In the initial stages the digital fossa between the testis and the epididymis on the lateral aspect is obliterated. Later the testis enlarges and becomes firm with loss of testicular sensation.

No ease of the above condition was reported in our series.

TREATMENT

MEDICAL

- DEC 100 mgm 3 times a day x 2-3 weeks

- Paramelaminyl Phenyl Stilbonate which acts on the infective larvae and the immature adult worms.

- Antibiotics (Aminoglycosides)

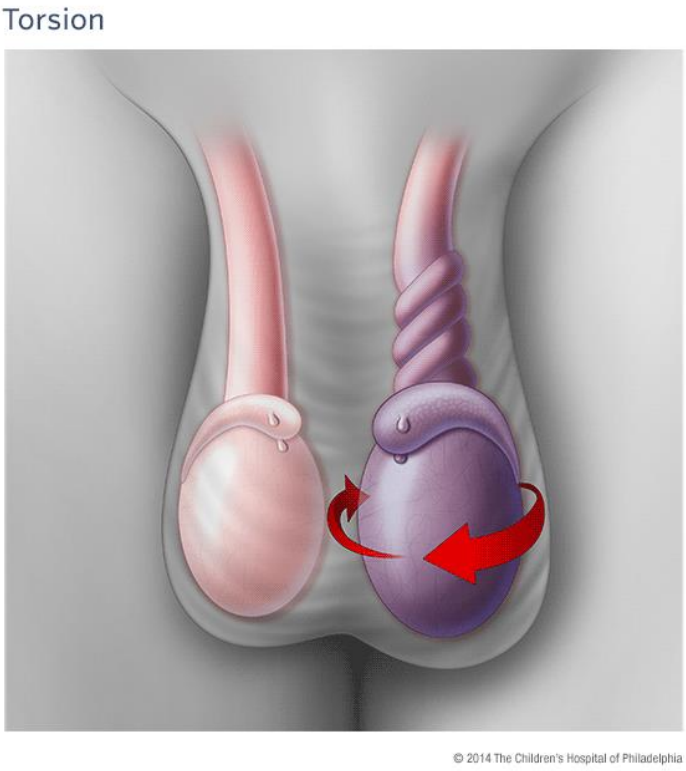
B. SURGICAL

Orchidectomy (low)

The patients who were diagnosed clinically as epididymoorchitis were treated conservatively except for one case.

D)TORSION OF THE TESTIS

It is defined as torsion of the cord with characteristic rotation of the testis and an anterior presentation of the testis. Torsion is relatively uncommon in fully descended testis as it is well anchored and can not rotate.



TORSION TESTIS

AETIOLOGY

a. Inversion of testis

b. Long mesorchium

c. High inversion of tunica vaginalis

d. Undescended or ectopic tests

e. Voluminous tunica vaginalis

f. Separation of tunica vaginalis from testis

TYPES

A. INTRAVAGINAL (PRE PUBERTAL MALES)

Occurs due to long mesoorchium and torsion occurs within the tunica vaginalis.

B.EXTRAVAGINAL TORSION (NEONATES)

When the cord twists above the mesoorchium the whole tunica rotates resulting in vascular occlusion and further gangrene of testis within 24 hours. It is unrelated to anomalous suspension of testis.

Intravaginal torsion has a higher incidence when compared with extravaginal torsion.

Torsion usually follows straining, lifting heavy objects or during coitus due to violent contractions of cremaster. Both the testis rotates in a fashion so as to face the midline. Torsion presents as severe pain in the testis or groin referred to the lower abdomen associated with nausea or vomiting. The scrotum is swollen and edematous within 2 to 3 hours and the testis and epididymis are swollen and edematous within 2 to 3 hours and the testis and epididymis lie in abnormal position in the high or horizontal position in addition of positivity of Prenh's sign. Surgical restoration of blood flow within 5 hours salvages the testicular function in 83% of patients.

TREATMENT

a. Within 3-4 hours of the episode manual derotation should be tried by gentle manipulation.

TORSION TESTIS

b. Exploration of testicular torsion — untwisting of the testis, trimming of the excessive tunica vaginalis with fixation of the testis to the lateral wall or high orchidopexy is performed. The same procedure is performed to the opposite side as the predisposing congenital abnormality to this conditions bilateral.

c. If the patient presents after complete jeopardisation of the testicular tissue diagnosed pre or per operatively removal of the infarcted testis is done.

TORSION OF TESTICULAR APPENDAGES

The torsion of testicular appendage results in a palpable localized painful lump on the upper pole of the testis. Transillumination reveals a characteristic “BLUE DOT SIGN” which is the infarcted appendage(Holland et al 1981).

TREATMENT

If the diagnosis is certain conservative management is all sufficient (Holland et al 1987). If any doubt exist exploration followed by excision is advised. In our two years of study one testicular torsion case was reported and which was treated by orchidectomy and contralateral orchidopexy.

E) HAEMATOCELE

It is defined as haemnorrhagic effusion into the tunica vaginalis, it is broadly classified into recent onset and old haematocele.

1. RECENT HAEMATOCELE

Commonly presents with a history of trauma followed by severe pain, tenderness and absence of transillumination. Other causes being surgical procedures like tapping of hydrocele or following vasectomy. Rarely tumors are said.

TREATMENT

Exploration of tunica with evacuation of clots. If testis is ruptured in a linear fashion careful suturing is advised; for a segmental damage wedge resection is usually employed.

2. OLD HAEMATOCELE

It is due to slow bleed into the tunica and hence painless. Closely mimics a tumor but can be differentiated by means of testicular sensation.

TREATMENT

It is again surgical exploration and if testis are atrophied low orchidectomy employed.

F)SPERMATOCELE

It is defined as a retention cyst which arised from vasa efferentia or from the sperm conducting system of the epididymis. It contains fluid of barley water appearance, rich in spermatozoa. It presents as a small, painless, soft fluctuant swelling situated at the head of epididymis.

TREATMENT

Smaller ones are self resolving, the larger needs either aspiration or excision. Sclerotherapy with Quindine hydrochloride/Urethane or with Tetradecyl can also be tried.

Only one case was reported in all these one year and was diagnosed pre operatively by ultrasound which showed an anechoic lesion containing turbid fluid. The cyst was excised and the contents proved the earlier diagnosis.

G) CYST OF EPIDIDYMIS

Multilocular crystal clear fluid filled cyst representing cystic degeneration of epididymis commonly presents in the middle aged men. They are thought to be remnants of mesonephric or paramesonepbric ducts. The cluster of thin walled cysts resembling bunch of grapes are felt separately from the testis.

TREATMENT

Excision

H) TESTICULAR TUMOURS

Testicular tumor gains its importance as the most common tumor in young adult men between ages of 19 and 35 years. Modern chemotherapeutic regimens, meticulous nerve sparing RPLND, advanced sensitive radioimmunoassay for tumour markers, miraculous development in the imaging field has made us to know about the pathogenesis and outcome of our therapeutic trails. Neoplasms of the testis are always almost malignant, the exception being rare fibromas of the tunica vaginalis and pure ledyig cell tumours.

MALIGNANT TUMOURS

Tumour of the testis comprises morphologically and clinically diverse group of neoplasms.

The over whelming majority are primary and most of these are germ cell tumours. The management of each neoplasm is dependent on the histology and is influenced by the lymphatic and vascular drainage of the testis.

HSTOLOGICAL CLASSIFICATION

SEMINOMA	40%
TERATOMA	32%
COMBINED SEMINOMA AND TERATOOMA	14%
INTERSTITAL TUMOURS	1.5%
LYMPHOMA	7%
OTHER TUMOURS	5.5%

INCIDENCE

About 99% of testicular neoplasms are malignant, and though they make up only about 1 to 2 percentages of malignant tumours in men they are of the commonest forms of cancer in the young males (GLIBERT and HAMILTON).

1. SEMINOMA

Seminoma accounts for approximately 50% of all GCT and most frequently appears in the fourth decade of life.

Seminomas are uniform in gross and histologic appearance and are characterized by slow growth and late invasion. Metastaic spread is through the testicular lymphatics and dominates intheiliac, aortic and renal hilar nodes.

The typical or classic form consists of sheets of large cells with abundant cytoplasm and round hyerchromatic nuclei with prominent nucleoli. A lymphocytic infiltrate or granulomatous reaction with giant cells or both is frequently present. In the atypical form lymphocytie infiltration or glaucomatous reactions are absent and necrosis is more common. Spermatocytic Seminoma is a rare histologic variant seen almost exclusively in men above the age of 45. It does not express placental alkaline phosphatase. Metastatic potential is minimal.

2. NON SEMINOMATOUS GERM CELL TUMOURS

Non Seminomatous histology comprises about 50% of all GCT s and most frequently presents in the third decade of life. Most tumours are mixed consisting of two or more cell types .

EMBRYONAL CARCINOMA (MTA)

Embryonal carcinoma is the most undifferentiated cell type. It is usually thought to be the most common testicular tumour of childhood; invasion and metastases occur earlier in the course of the disease. Because of the relatively rapid growth haemorrhage and necrosis are common. Metastasis to the abdominal lymphatics and the lungs may occur as an early event.

CHORIOCARCINOMA (MTT)

It is one of the most malignant tumors known. It consists of both cytotrophoblasats and syncytiotrophoblasts. Pure Choriocarcinoma is an extremely rare presentation. It often produce human chorionic gonadotrophin. The tumor is extremely rapidly invasive; metastasis may be both blood borne and through lymphatics and has usually occurred by the time of diagnosis. The prognosis for these patients is usually for worse than for patients because of the advanced stage at the time of diagnosis. Elements of choriocarcinomas are frequently found in mixed tumours.

TERATOMA

Teratoma arises from Totipotent cells in the rete testis and often contains a variety of cell types of which one or more predominate.

MATURE TERATOMA (TD)

It consists of adult type differentiated elements, but cannot be considered as benign because such growths have metastasis.

IMMATURE TERATOMA

It generally refers to tumour with partial somatic differentiation similar to that seen in a fetus.

TERATOMA WITH MALIGNANT TRANSFORMATION

It refers to a form of teratoma in which one of its components either immature or mature, develops aggressive growth and historically resembles another malignancy. They usually take the form of sarcomas and less frequently carcinomas.

YOLK SAC TUMOUR

This tumour mimics the yolk sac of the embryo and produces Alpha - fetoproteins. The cells may have a papillary, granular or solid appearance; and may be associated with schiller — duval bodies. Pure yolk sac historically is the most common histology found in childhood GCT.

SERUM TUMOUR MARKERS

ALPHA_FETOPROTEIN:

Its production is restricted to Embryonal cell carcinoma and endodermal sinus tumours. In patients with pure Seminoma elevated concentration of this reflects an undifferentiated nonseminomatous element.

HUMAN CHORIONIC GONADOTROPHIN HCG:

Elevated serum concentration can be found in patients with pure Seminoma as well as those with NSGCT.

LACTATE DEHYDROGENASE:

Increase in serum concentration are a reflection of tumour burden. growth rate, proliferation and death.

INITIAL PRESENTATION & MANAGEMENT

SYMPTOMS AND SIGNS

The pathognomonic presentation of a testicular tumour is a painless testicular mass that may range in size from a few mm to several cms. Only a minority of patients presents with painless mass; majority present with more diffuse testicular pain, swelling, hardness or some combination of these findings.

Delay in diagnosis caused by their patient or physician related factors or both generally results in higher stage of presentation and presumably lower survival.

In no other disease testicular sensation is lost so early or so completely. Ten percent have a lax secondary hydrocele. Between 1 and 5 percent have gynaecomastia.

A typical eases may simulate epididymoorchitis.

THE HURRICANE TUMOUR

It is a ferocious malignancy which kills in a matter of weeks.

DIAGNOSIS

A radical high inguinal orchidectomy using an inguinal incision with early high ligation of the spermatic cord at the deep inguinal ring minimizes local tumour recurrence and aberrant lymphatic spread and is the only acceptable therapeutic and diagnostic procedure.

In the rare situation where the diagnosis is in question, then an inguinal incision is required for an open biopsy.

STAGING

A comprehensive evaluation is necessary to define the extent of disease and to determine the appropriate treatment and should include pathologic examination, determination of serum concentration of AFP and hcG and radiological Studies.

Broadly Stage I disease is confined to the testis; Stage II disease is restricted to the retropertitoneum (subdiaphragmatic) and stageIII disease represents involvement of supradiaphragmatic or other nodal status or visceral disease. Stage IV represents distant metastasis.

MANAGEMENT

As soon as the diagnosis is arrived high inguinal orchidectomy (chevassou maneuver) was done.

MANAGEMENT AFTER ORCHIDECTOMY

CLINICAL STAGE I DISEASE: SEMINOMA

The treatment options available are radiotherapy and observation.

RADIOTHERAPY Radiation therapy remains the treatment of choice. Dose is 150 to 180 cGY/day for five sessions per week. Total dose is 2500 to 3000 cGY. The replase rate is negligible.

NSGCT

The options available are RPLND, observation and chemotherapy. As there is a predictable change lymphatic metastasis, modified bilateral RPLND is usually the Conventional method of approach.

STAGE II DISEASE: NSGCT (Low burden tumour)

The standard approach to patient's with clinical stage II A and s I - tumour has been RPLND. Margin of resection should not be compromised in an attempt to maintain ejaculatory Function.

SEMINOMA

Radiotherapy is the treatment of choice for most of the patients in this stage. The radiation portal and fraction is the same except that a boost of approximately 500-700 rads is administered.

MANAGEMENT OF STAGE II & III DISEASE (High tumour Burden)

Early Clinical trials developed regimens such as PVB (cisplatia. Vinblastine + Blemycin) and VAB — 6 (cisplatin, Vinbiastine, Blcomycin. Dactinomycin + Cyclophosphamide)., eliminated maintenance therapy and replaced Vinblastine with Etoposide. Adjunctive Surgery was shown to be essential for achieving a disease free state.

Although most patients were cured. significant adverse events were observed. So good and poor risk allocation algorithms were developed.

GOOD PROGNOSIS GERM CELL TUMOURS

Good risk patients are those with a high likelihood of cure. Randomized trails permit a systemic evaluation of the least toxic maximally efficacious therapy for good risk patients.

POOR RISK GERM CELL TUMOURS

As the optimal CT regimen is yet to be determined, the patients coming under the above group should be managed by clinical trails. IT is

done either by substitution or by dose intensification of an already existing one like Vepeside + Holoxan + Adriablastine.

ADJUVANT CHEMOTHERAPY (STAGE II)

Adjuvant CT remains a strong consideration in patients when six nods or more are involved, any node is larger than 2cms or there is extra nodal extension. Two cycles of cisplatin based CT are nearly always effective. Etoposide has replaced vinbiastine in adjuvant regiments A recent study suggests that Etoposide plus cisplatin alone is adequate.

MANAGEMENT OF RESIDUAL DISEASE

RETROPERITONEUM:

NSGCT: - There is general agreement over the meet to resect all sites of measurable residual disease. A bilateral RPLND is required for residual NSCCT in retroperitoneum.

SEMINOMA:- observation is the choice of management for the masses smaller than 3 cms. If more they are managed either by observation or surgical resection.

MANAGEMENT OF RELAPSE AFTER CHEMOTHERAPY

CONVETIONAL DOSE SALVAGE THERAPY

Ifosfamide is combined with cisplatin and Etoposide (VIP) or cisplatin and Vinblastine (Velp) in patients whose disease is resistant to two prior regimens

HIGH DOSE THERAPY

The drugs used in this regimen are carboplatin and Etoposide with or without an oxalophosphorine (Cyclophosphamide or Ifosfamide).

NEW AGENTS

A number of single agent trials have been conducted against refractory GCT.

Ifosfamide, Paclitaxel and oral Etoposide have demonstrated antitumorous activity. Because Paclitaxel is synergistic with Cisplatin and Oxasophosphorine in vitro, it is being studied in combination with Cisplatin plus Ifosfamide.

ROLE OF SURGERY

Surgery has curative potential in a highly selective group of patients with increase tumour marker level, even after Salvages CT.

BILATERAL TESTICULAR TUMOURS

The incidence of bilateral testicular tumours varies between 0.5 to 7.0% In general incidence metachronous testicular tumour is 4 times greater than that of synchronous variety (Christopher L. Coogen et al 1998) As there is 500 - 1000 times increase in risk of acquiring malignancy in the contralateral testis in a patients with testicular tumour has resulted in performing biopsy of the contralateral testis and prophylactic radiotherapy for the same. Radiotherapy virtually eliminates the possibility of contralateral tumour, despite preserving its hormonal production but eliminates the fertility potential. Treatment is based on pathology and clinical staging.

TESTIS PRESERVING SURGERY

In patients with bilateral testicular germ cell tumors organ sparing surgery represents a new therapeutic approach with endocrinological and psychological advantages.

Prerequisites need are the tumour should be organ confined with no infiltration of the rete testis, multiple biopsies of the tumour bed and peripheral parenchyma should be taken, any associated CIS should be treated by radiation therapy and patients must be followed closely (heiden reich — A et al 1997).

LYMPHOMA

Lymphoma is the most common secondary tumour of the testicle and the most frequent testicular neoplasm in men over the age of 50 years. Painless testicular enlargement is common, while bilateral involvement occurs in about third of patients.

Radical Orchidectomy establishes the diagnosis and cures a small subset of patients. Doxorubicin based regimen is used after orchidectomy. Survival is generally poor.

AIM & OBJECTIVES

- To study increased incidence of varicocele which is one of the most common surgically correctable cause of male infertility
- To study relationship between various scrotal swellings and male infertility
- To study various causes for scrotal swellings and their pattern of incidence in Govt Rajaji Hospital.

MATERIALS AND METHODS

The present study is a prospective study consists of 60 cases admitted in Government Rajaji Hospital, attached to Madurai Medical College, Madurai during the study from October 2016 to September 2017. 60 cases (with scrotal swelling) for the purpose of the study were selected randomly.

ELIGIBILITY CRITERIA

- INCLUSION CRITERA :

  1.All patients admitted in Govt. Rajaji hospital with scrotal swellings

  2. Age more than 12 years

  3.Unilateral or Bilateral

  4.Scrotal swellings with or without h/o infertility

- EXCLUSION CRITERIA

  1.Age less than 12years

  2.Patients with scrotal swelling due to Complete inguinal hernia and fourniers gangrene will be excluded from the study

SOURCE OF DATA

All patients diagnosed to have scrotal swellings coming under the inclusion criteria at Govt Rajaji hospital, Madurai

METHOD OF COLLECTION OF DATA

Details of cases , full history [including infertility history], clinical examination & signs and symptoms of patients coming under the inclusion criteria

RESULTS AND DISCUSSION

The following study was conducted at Government Rajaji hospital which is the hospital attached to Madurai Medical college. A total of 60 patients participated in this study. All the patients were selected randomly . The study was conducted for the period of 12 months from October 2016 to september 2017. For all patients clinical study was done through questionnaires and clinical examination.

Regarding occupation all patients were grouped into either manual labourer or sedentary (clerk, students). Duration of symptoms mentioned in days for all patients. Side mentioned either right or left or bilateral. Various presenting symptoms like painless swelling , pain, fever, urinary symptoms was mentioned. For all patients predisposing factors assessed through questionnaires and classified into either idiopathic or trauma or urinary factors or past history. Infertility history were asked for all married patients. For all patients ultra sound and Doppler was done. Treatment was divided into either conservative or surgical management. All this details mentioned in tables and statistical analysis was done.

PATTERN OF INCIDENCE

In our study most common cause of scrotal swelling was epididymo orchitis (16 cases) which accounts for 26.7% of total cases

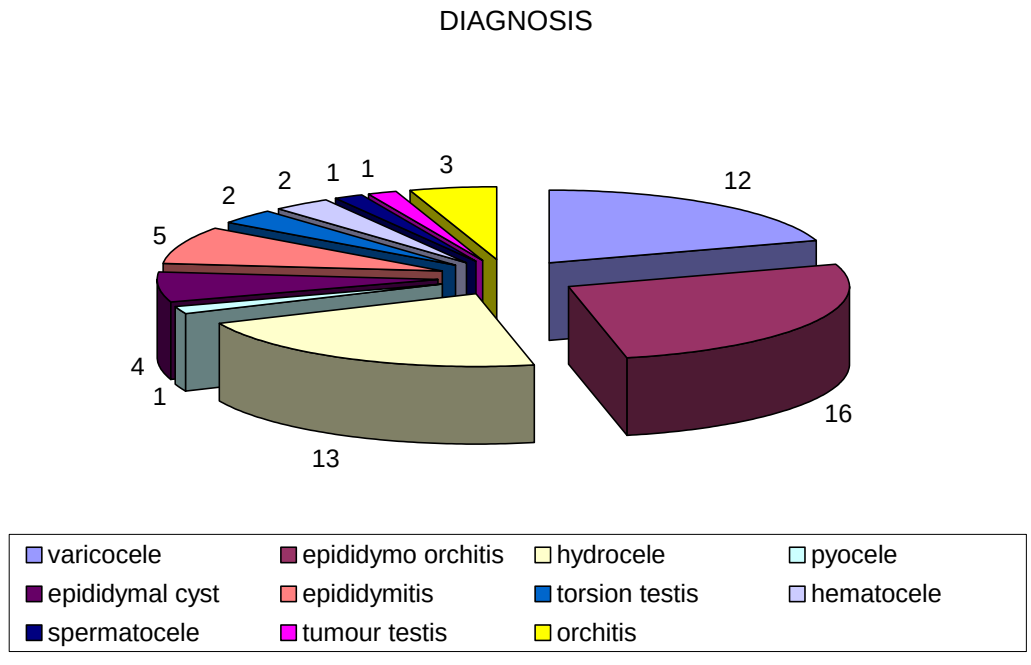
Second most common cause scrotal swelling in our study was hydrocele(13cases)which accounts for 21.7 % of total cases

Third most common cause was varicocele (12 cases)which accounts for 20% of total cases followed by epididymitis, orchitis, epididymal cyst was found

Hematocele and torsion testis accounts for total of 4 cases

Spermatocele, pyocele, tumour testis found to be least presentation

DIAGNOSIS	No.of cases	Percentage
varicocele	12	20.0
epididymo orchitis	16	26.7
hydrocele	13	21.7
pyocele	1	1.7
epididymal cyst	4	6.7
epididymitis	5	8.3
torsion testis	2	3.3
hematocele	2	3.3
spermatocele	1	1.7
tumour testis	1	1.7
orchitis	3	5.0
TOTAL	60	100.0

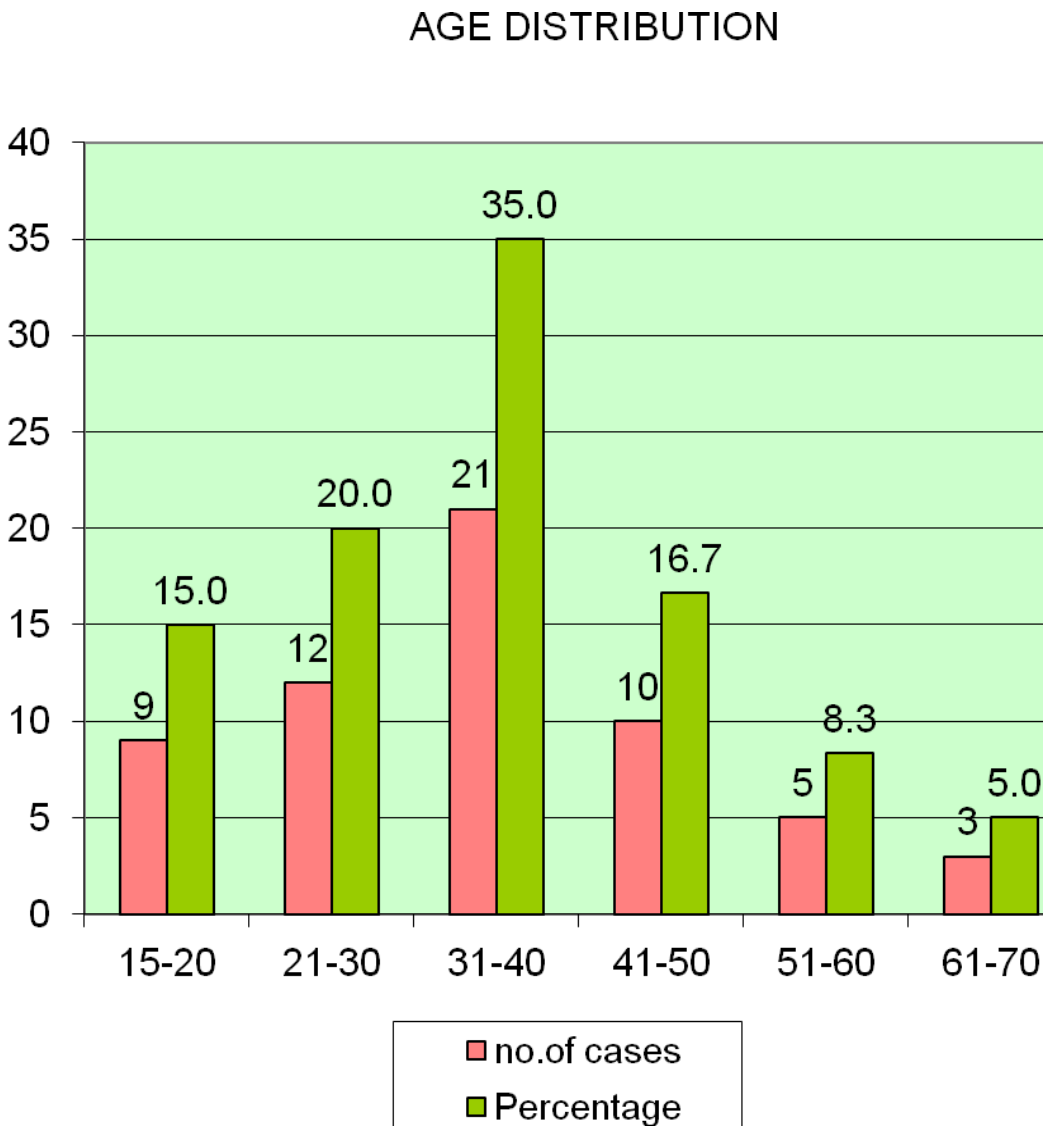


AGE DISTRIBUTON

The overall incidence of age is shown in the table. The maximum incidence of scrotal swelling occurred between the group of 31-40 years of age followed by the group of 21-30 years of age. Our study showed the incidence of age for epididymo-orchitis was maximum in the age group of 21-30

In our study 9 patients were between 15-20 years of age. Only 3 patients was found to be more than 60 years of age

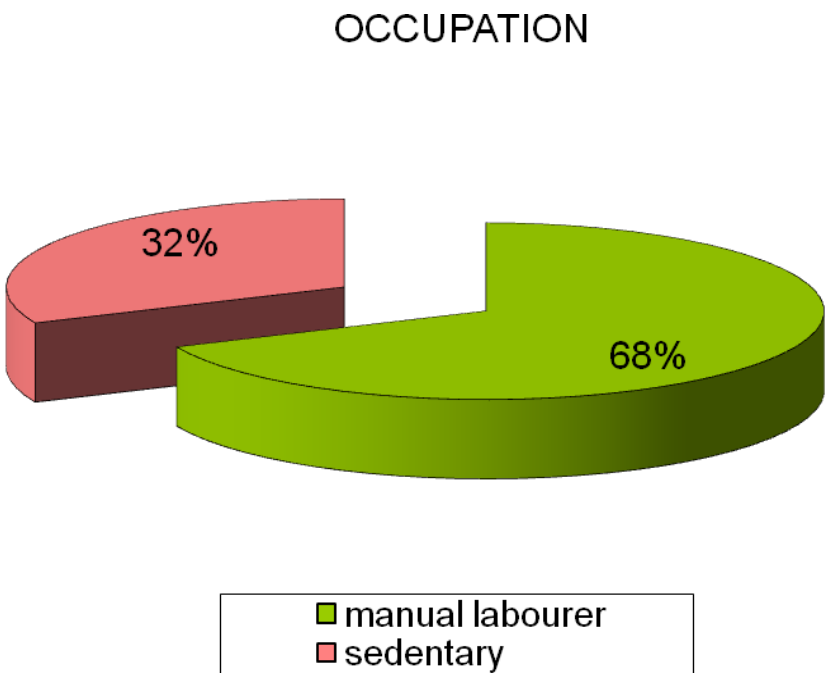
Age	no.of cases	Percentage
15-20	9	15.0
21-30	12	20.0
31-40	21	35.0
41-50	10	16.7
51-60	5	8.3
61-70	3	5.0
total	60	100.0


AGE DISTRIBUTION
40
35
30
25
20
15
10
5
0
9
15.0
12
20.0
21
35.0
10
16.7
5
8.3
3
5.0
15-20
21-30
31-40
41-50
51-60
61-70
no.of cases
Percentage

Incidence of Occupation

In our study series of 60 cases, 68.3% of cases were manual labourers. Only 31.7% of cases were sedentary workers such as clerks, students, etc.

Occupation	no.of cases	Percentage
manual labourer	41	68.3
sedentary	19	31.7
TOTAL	60	100.0



Mean Duration of Symptom

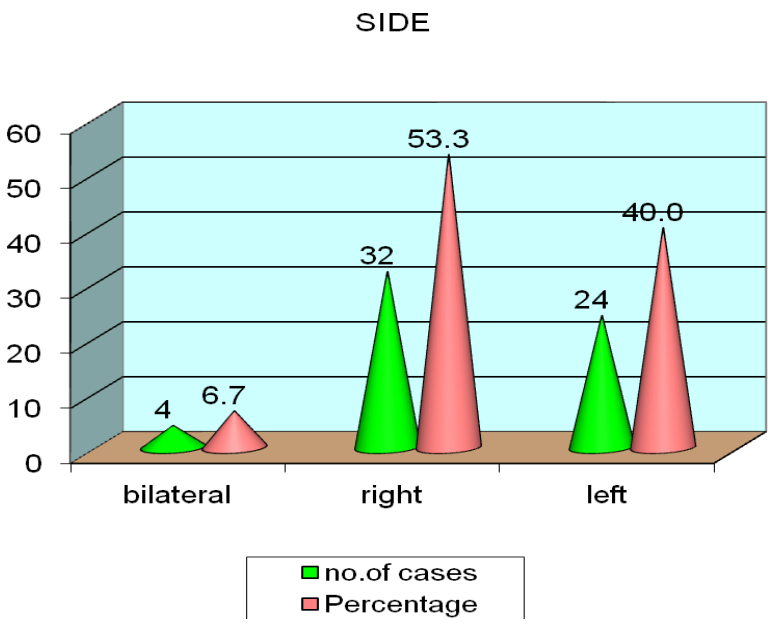
The duration of symptoms varied from few hours to some days. The shortest duration of symptoms detected by this study was 12 hours (Torsion testis)and longest duration was 353days(varicocele). The average duration of symptom in Epididymo-orchitis was 6.25 days. The average duration of symptom in torsion testis was 1 day

DIAGNOSIS	no.of cases	Mean duration of symptom (DAYS)
varicocele	12	353
epididymo orchitis	16	6.25
hydrocele	13	244
pyocele	1	3
epididymal cyst	4	151
epididymitis	5	6
torsion testis	2	1
hematocele	2	2.5
spermatocele	1	60
tumour testis	1	180
orchitis	3	6
TOTAL	60	-

Distribution of side

In our study, it was detected that scrotal swelling was distributed more on the right side. Right side was involved 53.3% of cases and left side was involved in 40%. 6.7% of cases had bilateral involvement. Also found that most of the varicocele and torsion testis on left side .Most of the hydrocele and epididymo orchitis have right side predominance

SIDE	no.of cases	Percentage
bilateral	4	6.7
right	32	53.3
left	24	40.0
TOTAL	60	100.0



Investigations

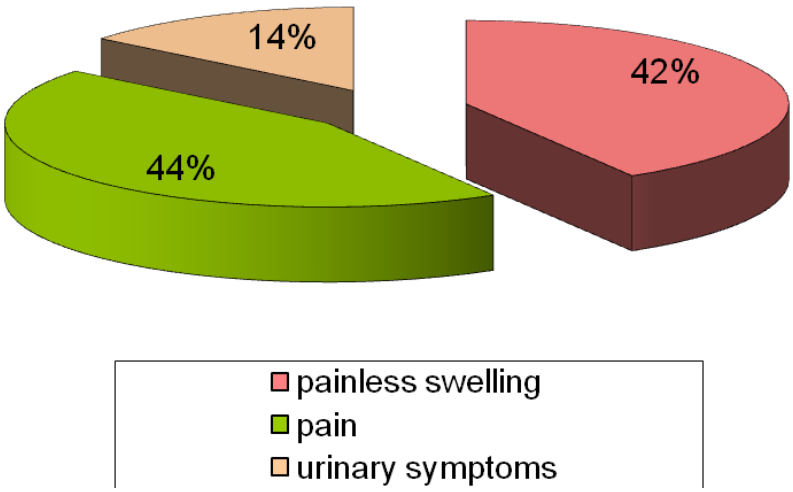
For all 60 cases, routine investigation like urine analysis, blood glucose, haemogram was done. Urine culture and sensitively was done for most of the cases especially who presented with urinary symptoms. Urine culture was positive in 8 cases.

PRESENTING SYMPTOMS

Out of 60 patients studied most common symptom was pain which is present in 51.7 % of cases. Painless swelling was presented in 48.3 % of cases .Followed by fever was presented in 33.3 % of cases. Urinary symptoms presented in 16.7% of cases

PRESENTING SYMPTOMS	no.of cases	Percentage
painless swelling	29	48.3
pain	31	51.7
urinary symptoms	10	16.7
fever	20	33.3

PRESENTING SYMPTOMS

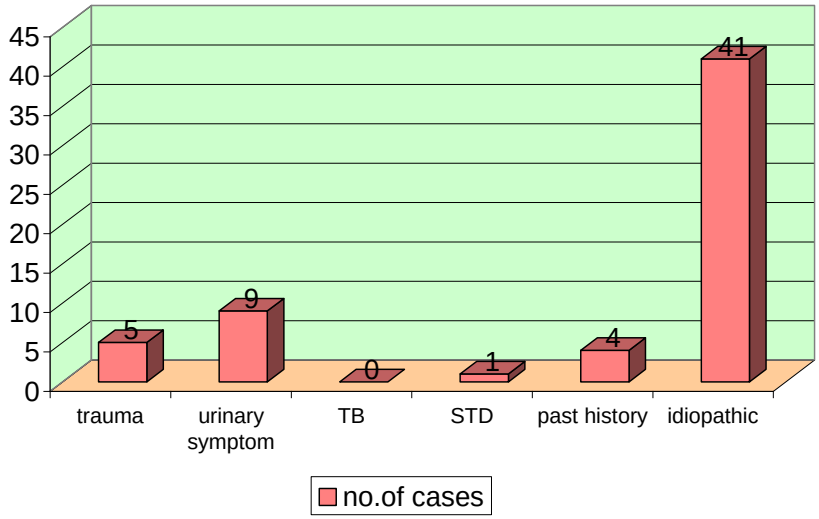


Predisposing Factors

In this study, history of trauma was present in 2 cases of haematocele, 1 case of testicular torsion ,1 case of pyocele and 1 case of epididymal cyst. History of similar complaints in the past was found in 4 cases of epididymo orchitis.Urinary symptoms was present 9 cases of epididymo orchitis.one case of syphilitic orchitis was present. But in majority of cases predisposing factors could not be made out which is labeled as idiopathic .Totally 41 cases found to be idiopathic

PREDISPOSING FACTORS	no.of cases	Percentage
trauma	5	8.3
urinary symptoms	9	15.0
TB	0	0.0
STD	1	1.7
past history	4	6.7
idiopathic	41	68.3
total	60	100.0

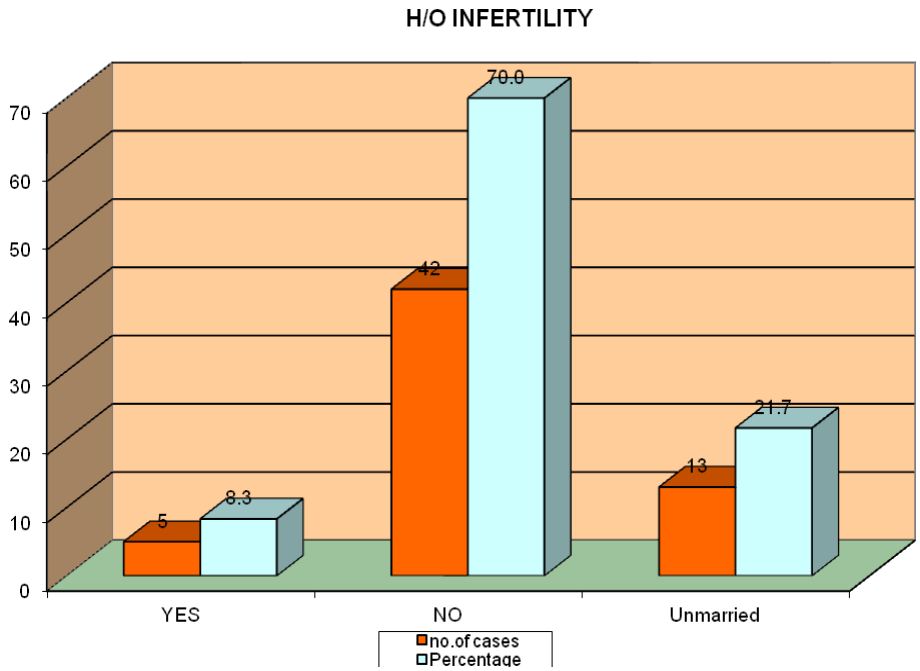
PREDISPOSING FACTORS



INFERTILITY HISTORY

Out of 60 patients 13 patients were unmarried. In remaining 47 married patients 5 patients had a history of infertility. Out of 5 infertile patients 4 patients were associated with diagnosis of varicocele, 1 patient associated with diagnosis of recurrent epididymo orchitis.

H/O INFERTILITY	no.of cases	Percentage
YES	5	8.3
NO	42	70.0
Unmarried	13	21.7
TOTAL	60	100.0



TREATMENT

Conservative Treatment

In this series of 60 cases, 25 cases (41.7%) were managed conservatively. 15 cases of epididymo-orchitis, 5 cases of epididymitis ,3 cases of orchitis , 2 cases of epididymal cyst were managed conservatively with antibiotics, analgesics, scrotal support and rest

TREATMENT	no.of cases	Percentage
conservative	25	41.7
surgical	35	58.3
TOTAL	60	100.0

Surgical Treatment

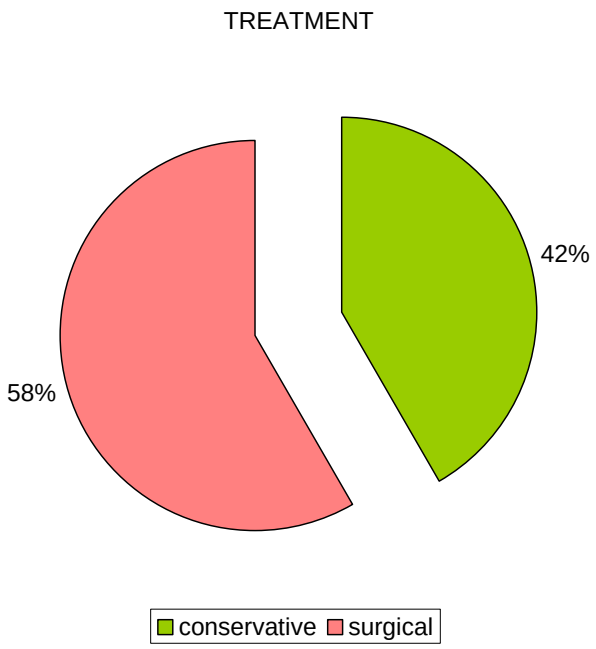
Out of 13 hydrocele cases, 11 cases of hydrocele treated with eversion and excision of sac ,2 cases of hydrocele treated with Lord's plication For all varicocle patients treated with laparoscopic varicocelectomy. Excision done for 2 cases epididymal cyst and 1 case of spermatocele

Scrotal exploration and drainage of pyocele was done in 1 case. Scrotal exploration with evacuation of hematoma was done in all 2 cases of haematocele.

Orchidectomy was done in 1 case of recurrent epididymo orchitis with testicular abscess.

Orchidectomy with contralateral orchidopexy was done in 2 cases of testicular torsion.

High inguinal orchidectomy done for 1 case of tumour testis.



CONCLUSION

60 cases of scrotal swellings were studied and results were,

- Most common cause of scrotal swelling is epididymo orchitis
- Increased incidence of varicocele cases
- Significant decreased incidence of hydrocele cases
- Among the scrotal swellings ,varicocele cases found that most commonly associated with infertility
- Most common age group of scrotal swelling is 31-40 years
- Most of the scrotal swelling present in right side than left side except varicocele and torsion testis.
- Most common presenting symptom is pain followed by painless swelling
- Most common predisposing factor is idiopathic
- Only 8% of scrotal swelling cases is associated with infertility among which varicocele being most common cause
- Most of the scrotal swelling cases treated surgically than conservatively

- Routine investigations like haemogram, urine analysis are not very much conclusive to the confirmed final diagnosis but are supportive to clinical diagnosis. Special investigations like USG and colour Doppler are useful to the accurate diagnosis.

- Since the disease of scrotum represents the inherent disease of epididymis, testis and other intrascrotal structure which may be affecting the entire life of the person in the form of sterility, they need aggressive management

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PROFORMA

Name : I.P. No.:

Age : D.O.A.:

Occupation D.O.S.:

Address D.O.D.:

Duration

(in DAYS)

Onset Acute

Subacute

Chronic

H/O 1. Trauma

2. Fever with Chills

3. Cough with expectoration / COPD /PT

4. Diabetes

5. Associated Medical Diseases if any

6. Pain Mild / Moderate I Severe

7. Exposure History

8. Family History

9. Urinary Symptoms

10. H/O Infertility

GENERAL EXAMINATION Febrile / Anaemic / Edemafeet / Clubbing / Gynecomastic / Jaundice / Lymph node

Pulse

BP

LOCAL EXAMINATION - Scrotal Swelling

Side -Size

Skin - Normal / thickened / rugositv

Signs of inflammation

Scrotal edema

Sinus / Ulcer / Redness / Blackening

Foul smell

Upper limit of the swelling

Reducible / Tenderness / Warmth

Skin - prefixed

Sinus - Fixed or not

Number

Anterior / Posterior

Discharge

Testis - Swollen

Normal

Atrophied

Sensation

Lie

If there is swelling

1. Consistency - Cystic / Solid
2. Fluctuation - +ve / -ve
3. Transillumination - +ve / -ve
4. Cough impulse - +ve / -ve
5. Tenderness - +ve / -ve
6. Epididymis - Swollen / Nodules / Number
7. Vas deferens - Nodules - Present / Absent
8. Cremaster - Hypertrophied / Not hypertrophied
9. Any other appearance - Bag of worms
10. RLNS - Inguinal / Iliac / Paraaortic

Abdomen — any mass — paraortic nodes

Liver Spleen

Kidneys Ascites

P/R

RS — Effusion / Fibrosis / Collapse / Normal

CVS—

Virchows node — Palpable / Not

INVESTIGATIONS

Hb% TC DC ESR

Peripheral smear for Mf

Blood Urea

Blood Sugar

VDRL

HIV

Microscopic examination of discharge

Culture

X-ray of Scrotum

X-ray Chest

US Scan

Conservative treatment — specific drugs and other measures

Pre Op findings

Anaesthesia

Incision

Content - Clear fluid

Altered blood

Blubbery material

Pus

Chyle

Smell

Testis - Normal / Atrophied / Pathological / Colour

If tumor - Cut section

Epididymis - Normal / Nodular

Vas deferens - Normal / Beading if any

S. NO.	NAME	AGE	IP NO.	OCCUPATION	DURATION (DAYS)	SIDE	PRESENTING SYMPTOMS	PREDISPOSING FACTORS	H/O INFERTILITY	USG DIAGNOSIS	TREATMENT
1	SYED	27	696427	manual labourer	3	bilateral	pain/fever	idiopathic	no	epididymo orchitis	conservative
2	murugan	52	753974	sedentary	60	right	painless swelling	idiopathic	no	hydrocele	surgical
3	zahir	28	457964	sedentary	5	left	pain/urinary	urinary symptom	no	epididymo orchitis	conservative
4	madhan	36	345678	manual labourer	730	left	painless swelling	idiopathic	yes	varicocele	surgical
5	paramaguru	29	890643	manual labourer	120	right	pain/fever/urinary	past history	yes	epididymo orchitis	surgical
6	surya	34	375788	manual labourer	150	left	painless swelling	idiopathic	no	hydrocele	surgical
7	mahath	46	256895	manual labourer	3	right	pain/fever	trauma	no	pyocele	surgical
8	madhan	26	643979	manual labourer	7	right	pain/fever	idiopathic	-	epididymo orchitis	conservative
9	varman	66	976543	manual labourer	90	bilateral	painless swelling	idiopathic	no	epididymal cyst	surgical
10	arulmozhi	44	456328	manual labourer	5	right	pain/fever	idiopathic	no	epididymitis	conservative
11	samai	22	475768	manual labourer	15	left	pain/urinary	past history	-	epididymo orchitis	conservative
12	esakki	34	678897	sedentary	280	left	painless swelling	idiopathic	yes	varicocele	surgical
13	gowthin	75	689008	manual labourer	210	bilateral	painless swelling	idiopathic	no	hydrocele	surgical
14	ramesh	18	565778	sedentary	1	left	pain/fever	idiopathic	-	torsion testis	surgical
15	suresh	55	345672	sedentary	9	bilateral	pain/urinary	urinary symptom	no	epididymo orchitis	conservative
16	ramanarayan	38	567287	sedentary	365	left	painless swelling	idiopathic	no	varicocele	surgical
17	siddiq	29	123790	manual labourer	5	right	pain/urinary	urinary symptom	no	epididymo orchitis	conservative
18	madhan	25	567432	sedentary	365	left	painless swelling	idiopathic	-	varicocele	surgical
19	ragav	26	345781	sedentary	3	left	pain/fever	trauma	no	hematocele	surgical
20	saravanan	63	778877	manual labourer	120	right	pain	idiopathic	no	epididymal cyst	surgical
21	pagalavan	35	123432	manual labourer	10	right	pain/urinary/fever	urinary symptom	no	epididymo orchitis	conservative
22	aravind	55	567567	sedentary	150	right	painless swelling	idiopathic	no	hydrocele	surgical
23	Muniyasamy	19	65741	sedentary	1	left	pain/fever	trauma	-	torsion testis	surgical
24	Ganesan	32	33495	manual labourer	2	right	pain/fever	idiopathic	no	epididymo orchitis	conservative
25	Durai Kalidasan	36	36272	manual labourer	120	left	painless swelling	idiopathic	no	varicocele	surgical
26	Pandi	37	59169	manual labourer	2	left	pain/urinary	past history	no	epididymo orchitis	conservative
27	Murugan	36	35108	manual labourer	730	left	painless swelling	idiopathic	no	hydrocele	surgical
28	Kovilpillai	46	38008	manual labourer	365	right	painless swelling	trauma	no	epididymal cyst	conservative
29	Raja	18	29800	manual labourer	6	right	pain/fever	idiopathic	-	epididymo orchitis	conservative
30	Nagalinga sethup	38	26499	sedentary	365	left	painless swelling	idiopathic	no	varicocele	surgical
31	Prabhu	28	30154	sedentary	5	right	pain/urinary	urinary symptom	no	epididymitis	conservative
32	Manivannan	38	31472	manual labourer	365	right	painless swelling	idiopathic	no	hydrocele	surgical

33	Muthu	48	58550	sedentary	30	right	painless swelling	idiopathic	no	epididymal cyst	conservative
34	Mukesh	36	59877	manual labourer	8	left	pain/urinary	urinary symptom	no	epididymitis	conservative
35	Palani	34	21536	manual labourer	150	right	painless swelling	idiopathic	no	varicocele	surgical
36	Veerapathran	18	26170	sedentary	2	right	pain	trauma	-	hematocele	surgical
37	Gurusekaran	57	31092	manual labourer	90	right	painless swelling	idiopathic	no	hydrocele	surgical
38	Thamilarasan	34	33815	sedentary	1045	left	painless swelling	idiopathic	yes	varicocele	surgical
39	Karupanan	17	38324	manual labourer	8	left	pain/fever	idiopathic	-	epididymo orchitis	conservative
40	Senthilkumar	39	29915	manual labourer	270	right	painless swelling	idiopathic	no	hydrocele	surgical
41	Saravanan	41	8025	manual labourer	60	right	pain	idiopathic	no	spermatocele	surgical
42	Izmayil	16	32584	manual labourer	8	left	pain/fever	idiopathic	-	epididymo orchitis	conservative
43	Sheik ismail	39	3804	manual labourer	365	right	painless swelling	idiopathic	yes	varicocele	surgical
44	Manikandan	36	33846	manual labourer	5	right	pain/fever	idiopathic	no	epididymitis	conservative
45	Manivannan	44	33815	sedentary	150	left	painless swelling	idiopathic	no	hydrocele	surgical
46	Udayan	55	13585	manual labourer	7	right	pain/fever	STD	no	orchitis	conservative
47	Boominathan	27	34627	sedentary	60	left	painless swelling	idiopathic	no	varicocele	surgical
48	Alagu	19	22421	manual labourer	8	right	pain/fever	past history	-	epididymo orchitis	conservative
49	Kasipandi	45	19268	manual labourer	180	right	painless swelling	idiopathic	no	carcinoma testis	surgical
50	Muthuraja	33	19232	manual labourer	7	left	pain/fever	idiopathic	no	epididymitis	conservative
51	Murugaselvam	22	17851	manual labourer	90	right	painless swelling	idiopathic	-	hydrocele	surgical
52	Sedhu	36	17420	manual labourer	6	left	pain/fever	idiopathic	no	orchitis	conservative
53	Vaiyathurai	22	13615	manual labourer	365	left	painless swelling	idiopathic	no	varicocele	surgical
54	Vagaraj	44	16687	manual labourer	730	right	painless swelling	idiopathic	no	hydrocele	surgical
55	Sivaji Ganesan	18	16227	manual labourer	5	right	pain/urinary	urinary symptom	-	epididymo orchitis	conservative
56	Arichandran	48	27840	manual labourer	120	right	painless swelling	idiopathic	no	hydrocele	surgical
57	Vellaisamy	19	29053	sedentary	30	right	painless swelling	idiopathic	-	varicocele	surgical
58	Muthu	46	172501	manual labourer	180	right	painless swelling	idiopathic	no	hydrocele	surgical
59	Natarajan	32	60891	manual labourer	7	right	pain/fever	urinary symptom	no	epididymo orchitis	conservative
60	Mosin	36	58762	sedentary	6	left	pain/fever	urinary symptom	no	orchitis	conservative

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ETHICS COMMITTEE CERTIFICATE

Name of the Candidate	:	Dr.M.Senthilvelavan
Course	:	PG in MS., General Surgery
Period of Study	:	2015-2018
College	:	MADURAI MEDICAL COLLEGE
Research Topic	:	Analysis of scrotal swellings in Madurai Medical college
Ethical Committee as on	:	27.07.2017

The Ethics Committee, Madurai Medical College has decided to inform that your Research proposal is accepted.

Member Secretary | Chairman | Dean / Convenor

Prof Dr V Nagaraajan
M.D., MNAMS, D.M., Dsc.,(Neuro), Dsc (Hon)
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Urkund Analysis Result

Analysed Document: Dr. Senthil placarism.doc (D31207479)
Submitted: 10/11/2017 9:34:00 AM
Submitted By: velmbbs01@gmail.com
Significance: 1 %

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